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(FILE 'HOME' ENTERED AT 17:42:41 ON 02 DEC 2002)

FILE 'CA' ENTERED AT 17:42:52 ON 02 DEC 2002

L1 11 S LI H?/AU AND ANALYST/SO
L2 2 S L1 AND 1987/PY
L3 17018 S (INCEMENT? OR STANDARD OR MULTIPLE OR SEVERAL OR PLURAL?) (3A)
(ADDITION OR INJECTION OR SUBTRACTION)
L4 23 S L3 AND PHASE(3A) (PLOT? OR DIAGRAM? OR GRAPH? OR REPRESENTAT?)
L5 477 S L3 AND AUTOMAT?
L6 174 S L5 AND(MIX? OR SOLUTION)
L7 132 S L6 NOT CHROMATOG?
L8 122 S L2,L4,L7 NOT PY>1998
L9 118 S L8 NOT(GELATIN OR SUPERCONDUCT? OR MAGNET)
L10 113 S L9 NOT(CLOUD OR OXIDE SYSTEM OR ELECTROPHOR?)

=> d l10 bib,ab 1-113

L10 ANSWER 10 OF 113 CA COPYRIGHT 2002 ACS
AN 128:187964 CA
TI Multipoint calibration from one standard **solution** and **automatic** dilution of
overrange samples for flame atomic absorption spectrometry
AU Frary, Brian D.
CS Varian Australia Pty Ltd., Victoria, 3170, Australia
SO Analyst (Cambridge, United Kingdom) (1998), 123(2), 233-237
AB A modified peristaltic pump sample introduction system for flame at.
absorption spectrometry (AAS) is described. The device provides **automatic**
instrument calibration from a single bulk std. The modifications overcome
the difficulties previously assocd. with the use of peristaltic pumps.
Single and dual pump systems were evaluated for normal and **std. addn.**
calibration. Data from both indicate that accuracy and precision are as
good as, or better than, that achieved with manual std. prepn. **Automatic**
overrange sample diln. is also provided by the system.

L10 ANSWER 18 OF 113 CA COPYRIGHT 2002 ACS
AN 126:270593 CA
TI Phase behavior of nematic-nonnematic binary systems
AU Sunohara, K.; Fujimaru, A.; Shinya, A.; Kobinata, S.
CS Toin University of Yokohama, Yokohama, 227, Japan
SO Molecular Crystals and Liquid Crystals Science and Technology, Section A:
Molecular Crystals and Liquid Crystals (1995), 265(Proceedings of the 15th
International Liquid Crystal Conference, 1994, Pt. 5), 2747-2752
AB The effect of **addn.** of **several** nonnematic solutes to nematic liq. crystal
5CB was studied. The increase of nematic-isotropic phase transition temp.
in the p-amino-p'-nitrobiphenyl/5CB mixt. was obsd., contrary to the
usually obsd. depression. The results were analyzed by a mean field
treatment of mixt.

L10 ANSWER 21 OF 113 CA COPYRIGHT 2002 ACS
AN 126:152144 CA
TI A new data processing algorithm for the addition method
AU Belchev, S.; Ivanova, M.
CS Fac. Chem., Univ. Sofia, Sofia, Bulg.
SO Analytical Laboratory (1996), 5(3), 206-210
AB A new algorithm for data processing applicable to the addn. method is
proposed. Its advantage is the statistical assessment of the linearity of
function signal. At least three addns. are required by this algorithm but
the computational procedure is as rapidly convergent when more than three

stds. are used. Two programs are written on the proposed algorithm and applied to data processing in the anal. chem. The one of them is a part of the package serving an **automated** photometric system for spectral photog. plates processing.

L1V ANSWER 41 OF 113 CA COPYRIGHT 2002 ACS

AN 116:268086 CA

TI **Automated** gravimetric management of **solutions**. Part 1. High-performance microcomputer-controlled gravimetric buret

AU Cunha, Ildenise B. S.; Pasquini, Celio

CS Inst. Quim., Univ. Estad. Campinas, Campinas, Brazil

SO Analyst (Cambridge, United Kingdom) (1992), 117(5), 905-11

AB A versatile gravimetric buret and the necessary interface that allows it to be controlled by an IBM-PC microcomputer are described. The buret employs an electronic balance that holds three 30 mL flasks. The flasks are used for delivering different titrants or std. **solns.** and are connected to the sensor through the bottom of the balance. The addn. of the **soln.** is controlled by poly(tetrafluoroethylene) electromech. valves housed inside the unit. The flasks can be refilled **automatically** from larger reservoirs placed outside the case. **Soln.** level sensors are used to realize **automatic** refill when necessary. The mass delivered from the flasks is read by the computer through an RS232C interface. The buret can, when driven by the appropriate software, perform potentiometric, biamperometric and spectrophotometric titrns., **std. addns.** procedures and the prepn. of **std. solns.**

L10 ANSWER 49 OF 113 CA COPYRIGHT 2002 ACS

AN 110:165121 CA

TI The Orion 960 Autochemistry system; a complete potentiometric analyzer

AU Comer, J.

CS Orion Res., Inc., USA

SO Advances in Instrumentation (1987), 42(1), 489-96

AB The Orion 960 Autochem. System is a new instrument for detg. ions and neutral species in **soln.** by potentiometric techniques. The instrument uses pH or ion-selective electrodes for direct measurement, following calibration in two buffer or **std. solns.** It also uses electrodes in a variety of techniques based on the measurement of changes in electrode potential as a **std. soln.** is added to the sample. These techniques include **automatic** potentiometric titrn. using fixed mV or pH end points, first and second deriv., and titrns. based on the use of Gran anal. The Orion 960 can also analyze samples using KAP anal., a technique based on calcn. of sample content following a series of **addns.** of **std. soln.**; the electrode senses the same ion in the sample and the std. The most important of the KAP techniques is probably **multiple** known **addn.** (MKA), which can provide reproducibility and precision approaching that of titrn., for ions which are difficult to titrate such as sodium, potassium, and nitrate. With direct measurement capabilities, **automatic** titrn., Gran anal. and KAP techniques, the ORION 960 can calc. results from any part of the titrn. curve, before, at, or after the endpoint, which leads to the description in the title, "a complete potentiometric analyzer".

L10 ANSWER 56 OF 113 CA COPYRIGHT 2002 ACS

AN 108:105456 CA

TI Computer approach to ion-selective electrode potentiometry by two standard additions and subtractions methods through ionic strength calibration

AU Li, Heng

CS Food Sci. Dep., Shanghai Fish. Univ., Shanghai, Peop. Rep. China

SO Analyst (Cambridge, United Kingdom) (1987), 112(11), 1607-9

AB The effect of ionic strength in std. addns. and subtractions methods has been utilized for detg. an unknown concn. using an ion-selective electrode without prior calibration of the electrode. In the simplest instance, only 2 std. addns. or subtractions are required. An initial value of unknown concn. or electrode slope is first assumed to solve the equations repeatedly. This method gives greater accuracy than the methods which are used at present. The method was used to evaluate the unknown concn. and electrode slope. The blank soln. has the same ionic strength as the std. soln. in the 2 std. addns. method. In the 2 std. subtractions method, a suitable blank soln. is chosen. The effectiveness of computer iterative soln. of the 2 std. addns. method is demonstrated on a lead sample.

L10 ANSWER 79 OF 113 CA COPYRIGHT 2002 ACS

AN 95:121178 CA

TI Multiple injector flow through dissolution cell for dissolution testing apparatus

IN Smolen, Victor F.

PA USA

SO U.S., 9 pp.

PI US 4279860 A 19810721 US 1980-162780 19800625

PRAI US 1980-162780 19800625

AB An app. for testing the dissoln. properties of drugs in order to predict their bioavailability comprises a **multiple-injection** dissoln. cell for rapidly and/or iteratively inserting a drug specimen into a dissoln. testing system having a plurality of flow channels configured either as a linear or circular array to facilitate the rapid and/or **automatic** alignment of each flow channel successively with the dissoln. chamber of a testing system.

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AN 88:94605 CA

TI Determination of residual chlorine in water with computer **automation** and residual-chlorine electrode

AU Rigdon, Lester P.; Moody, Gwilym J.; Frazer, Jack W.

CS Lawrence Livermore Lab., Univ. California, Livermore, Calif., USA

SO Anal. Chem. (1978), 50(3), 465-9

AB Active Cl (3-100 ppb) was detd. in water with an accuracy of 2 ppb using the Orion model 97-70 residual-Cl electrode and the known **std.-addn.** potentiometric technique to measure the p.d. between iodide and I that is generated by active Cl. The assay is computer-**automated** to carry out the **multiple addn.** of a **std**; measure the potentials; plot the potentiometric curve, its Gran version, and an error function; and calc. the concn. of active Cl in the assay **soln.** The electrode, the chem. reactions that occur during the assay, the prepn. and storage of stds., and the procedure are discussed. Data obtained from the assay of stds. prepd. from deionized water, 2 sources of public water supply, and 1 swimming pool are presented.

Ⓛ10 ANSWER 94 OF 113 CA COPYRIGHT 2002 ACS

AN 84:159228 CA

TI Microdetermination of ammonia using an ammonia gas-sensing electrode and a minicomputer

AU Selig, Walter; Frazer, Jack W.; Kray, Arthur M.

CS Lawrence Livermore Lab., Univ. California, Livermore, Calif., USA

SO Mikrochim. Acta (1975), 2(6), 675-82

AB NH₃ (2.8 ppm-14 ppb) was detd. by potentiometric titrn. at pH 12-12.5 at an NH₃ gas-sensing electrode by using the **multiple addn.** method and Gran plots. A computer-controlled titrn. system was used for the titrn. and for data processing. NH₃ sample **soln.** (1 ml) was added to 49 ml H₂O, and 0.5

ml 10N NaOH was added. Various fixed amts. (1-10 ml) of the same **soln.** were then added from the computer-controlled buret. Recoveries increased with decreasing amts. of total titrant. The relative std. deviations were 3.01 and 0.98% for the detn. of 2.8 ppm and 28 ppb N, resp., by using 2.5-ml titrn. vol. The method is applicable to the detn. of nitrate after redn. to NH₃ and to org. N after Kjeldahl digestion.

L10 ANSWER 95 OF 113 CA COPYRIGHT 2002 ACS

AN 84:83643 CA

TI On-line, computer-controlled potentiometric analysis system

AU Ariano, John M.; Gutknecht, W. F.

CS Dep. Chem., Duke Univ., Durham, N. C., USA

SO Anal. Chem. (1976), 48(2), 281-7

AB A computer-controlled, direct potentiometric anal. system was developed. During a typical anal., a series of **std. addns.** are made to an unknown **soln.** in a cell contg. an ion-selective electrode and a ref. electrode. These addns. are optimized in that the vol. of each is **automatically** adjusted so as to yield an even distribution of resulting cell voltages. The cell voltages (which are acquired with a computer-optimized sampling technique) and the **std. addn.** data are fit to the Nernst equation with the nonlinear least squares procedure. This system was used to **automatically** analyze for 10⁻¹ to 10⁻³M K with accuracy and precision both being ~2%.

=> log y

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